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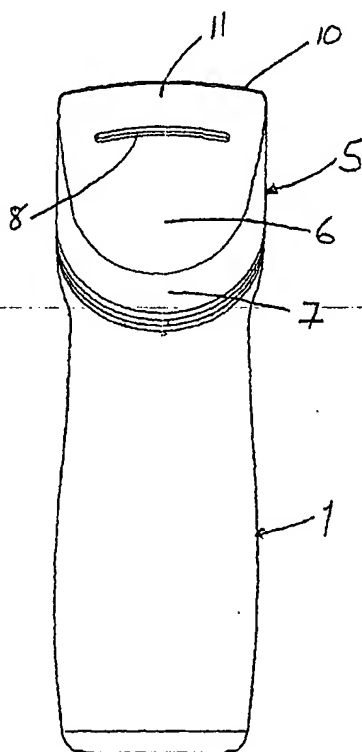
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[Continued on next page]

(54) Title: **APPLICATOR, E.G. FOR SHAVING PREPARATIONS AND THE LIKE**



(57) Abstract: An applicator for applying a cream or lotion or like substance to the skin and spreading the substance thereon to coat an area of the skin. An applicator head (5) defines an application surface (6) with at least one opening (8) therein for delivery of the substance. The application surface (6) has a substantially flat main area with an arcuate leading edge (7). A spreading lip (10) is disposed opposite the leading edge (7) and extends upwardly and rearwardly and tapers to a free edge to form a spreading blade tip. The leading edge is smoothly rounded to define a gradual transition between the main area of the application surface and a peripheral surface extending around the head to the position of the spreading lip.

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APPLICATOR, E.G. FOR SHAVING PREPARATIONS AND THE LIKE

This invention relates to an applicator for applying a substance, such as a cream or lotion, to the skin and spreading it over an area of the skin. The applicator of the invention is especially suited to the application of preparations for use in shaving, in particular shaving cream, shaving gel or shaving foam with which a skin area is commonly coated prior to shaving with a safety razor, and the invention is specifically described herein with reference to use for applying shave preparations. It is to be understood, however, that the applicator can be used for other substances which are intended to be coated onto the skin.

Shaving foams and self-foaming shaving gels are usually supplied in aerosol cans and most commonly they are spread onto the skin area to be shaved by means of the fingers or sometimes with a shaving brush onto which an appropriate quantity of the shaving foam or gel is delivered from the dispensing nozzle of the aerosol container. Use of the fingers tends to be rather messy and inconvenient, and for shaving foam and self-foaming gels a brush which is traditionally used to create a lather is not strictly needed. There is, therefore, a need for a more convenient method of applying shave preparations to the skin, and with this aim in mind the present invention proposes an applicator for applying a substance to the skin and spreading the substance thereon to coat an area of the skin, comprising an applicator head defining an application surface with at least one opening therein for delivery of a substance to the application surface, the application surface having a substantially flat main area with an arcuate leading edge, and a spreading lip disposed opposite the leading edge and extending upwardly and rearwardly with respect to the main area of the application surface, the spreading lip tapering to a free edge to form a spreading blade tip, the leading edge being smoothly rounded to define a gradual transition between the main area of the application surface and a peripheral surface extending around the head to the position of the spreading lip.

The applicator head can be conveniently mounted on a handle structure which can accommodate a reservoir containing the substance to be applied to the skin, and a control member can be provided on the handle structure to control delivery of the substance to the application surface of the head. More particularly the handle structure can have the form of a casing adapted to house a pressurized container in which the substance is supplied and stored, the pressurized container having a dispensing valve which is operable by means of the control member so that the substance flows from the container to the application surface of the applicator head. In another particular form the handle structure may define a reservoir and be equipped with a pump actuated by a button, lever or other member provided on the handle structure for delivery of the reservoir contents to the application surface. A further alternative is for the handle structure to comprise a

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squeeze-type container which allows the contents of the container to be delivered to the application surface by squeezing the container in the hand. With such applicators, a quantity of shaving preparation can be easily dispensed onto the application surface ready to be applied to and spread onto the skin. The applicator may be disposable, that is  
5 intended to be discarded when it has become emptied.

With the applicator of the invention the applicator head is not required to act as a temporary reservoir for the substance being applied, as a head of foam material would, and the applicator head can even be made of a hard material although some flexibility of at least the spreading blade tip is preferred. In a preferred construction the applicator  
10 head comprises a pad of resiliently compressible material, in particular an elastomeric material which is non-absorbent and has a substantially continuous surface structure at the application surface, that is the surface is free from voids in which the substance is intended to be held temporarily in the course of being applied to the skin.

The pad is preferably dimensioned and configured to ensure comfort in use. Thus,  
15 the spreading lip is arcuate as seen in a direction perpendicular to the main area of the application surface, and the front face of the spreading lip is concavely curved to define a smooth transition with the main area of the application surface. Relatively sharp corners on the pad are avoided and the leading edge is preferably rounded at a radius in the range of 3 to 12 mm. The spreading lip suitably projects above the plane of the main area of the  
20 application surface to a height in the range of 5 to 15mm. The minimum transverse dimension of the application surface, which is preferably the lateral dimension, is approximately in the range of 3.5 to 5.5 cms. An applicator of such dimensions is especially suited for application of substances over relatively large skin areas and for that reason is especially suited to use in applying shaving preparations to skin areas commonly  
25 shaved by females.

The above and other preferred features of the invention will be more fully understood from the following detailed description of a currently preferred embodiment of the invention, reference being made to the accompanying drawings in which:

Figure 1 is a front elevation of an applicator according to the invention suitable for  
30 applying self-foaming shaving gel to a skin area to be shaved;

Figure 2 is a side elevation of the applicator ;

Figure 3 is a rear elevation of the applicator ;

Figures 4 and 5 are perspective views showing the applicator from the front and rear respectively; and

35 Figure 6 is an enlarged view showing the applicator head as seen in the direction of the arrow A in Figure 2; and

Figure 7 is a top plan view of a modified applicator having a different form of

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control member.

The self-foaming shaving gel applicator illustrated in the drawings has a rigid casing structure 1 which forms a handle with a main part of substantially cylindrical form suitably dimensioned so that it can be held comfortably in one hand. The casing 1 includes a detachable cover 2 to enable a pressurized container holding a supply of shaving gel to be replacably inserted into the casing. As well known in the art the pressurized container is equipped with a dispensing valve which is operable to allow the pressurized contents to flow from the interior of the container to a discharge nozzle. The casing cover 2 is provided with a control member 3 enabling activation of the valve from outside the casing. As shown in Figures 1 to 5 the control member 3 consists of a button which can be depressed to operate the valve whereas in the modified container of Figure 7 the control member 3 is in the form of a lever which protrudes from the casing and may facilitate valve operation by means of the forefinger of a hand in which the applicator is held.

At the upper end of the handle the structure defines a substantially circular mountings face which is inclined downwardly and forwardly and at which an applicator head in the form of a pad 5 is mounted. The applicator pad is made of a resiliently compressible material so that it has a soft rather than hard feel when applied against the skin, a suitable material being an elastomer with a Shore A hardness of not less than 30, for example Kraton with 45 Shore A hardness. It is possible, however, for the applicator head to be of a hard, such as a rigid plastics material with hardness up to Rockwell R120. The pad 5 is shaped so that there are no sharp corners or edges which could cause discomfort as the applicator is moved across the skin in use. The pad defines an application surface a main area 6 of which is substantially flat. The lower, leading edge 7 of the application surface is arcuate and extends through an arc of a little under 180°, and this edge is rounded at a relatively large radius, such as in the range of 3 to 12mm e.g. of about 5 to 7 mm, so that gradual contact will be made with the skin as the applicator is moved over the skin. A delivery duct passes through the pad 5 and opens into a slot 8 at the main area 6 of the application surface. The nozzle of the pressurized container which is housed in the casing is of course arranged to direct the shaving gel discharged from the container into the delivery duct so that it flows immediately out of the slot 8 onto the application surface. At its trailing edge the pad 5 has a spreading lip 10 which is inclined upwardly and rearwardly with respect to the plane of the main area 6 of the application surface, and there is a smooth concave transition between the area 6 and the front face 11 of the spreading lip 10. The spreading lip 10 tapers in thickness to its free edge to form a flexible blade tip which is able to flex in order to pass easily over any irregularities encountered at a skin surface across which the lip is moved. Although the spreading lip

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10 is arcuate as viewed in a direction perpendicular to the main area 6 of the application surface (Fig. 6), it can be seen that the free edge of this lip is substantially straight, and in particular slightly convex as viewed from the front. The height to which the spreading lip projects above the plane of the main area 6 of the application surface is suitably in the  
5 range of 7 to 12 mm.

The described applicator is easy and comfortable to use. The control button/lever 3 is operated so that an appropriate quantity of shaving gel is delivered to and is collected on the application surface after which it is applied to the skin with a series of strokes so that the spreading lip 10 spreads the shaving gel in a uniform coating over the skin area  
10 which is to be shaved. It may be noted that the applicator is not intended to produce any massaging effect such as that normally associated with use of a shaving brush in a manner employed when it is desired to create a lather.

It should be understood that the foregoing description of the preferred embodiment is given by way of not limiting example only and that modifications are  
15 possible without departing from the scope of the invention as defined by the claims which follow. As one possible example of such a modification it may be mentioned that in place of the slot 8 two or more discrete openings could be provided for delivery and distribution of the shaving gel over the application surface of the applicator pad.

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CLAIMS

1. An applicator for applying a substance to the skin and spreading the substance thereon to coat an area of the skin, comprising an applicator head defining an application surface with at least one opening therein for delivery of a substance to the application surface, the application surface having a substantially flat main area with an arcuate leading edge, and a spreading lip disposed opposite the leading edge and extending upwardly and rearwardly with respect to the main area of the application surface, the spreading lip tapering to a free edge to form a spreading blade tip, the leading edge being smoothly rounded to define a gradual transition between the main area of the application surface and a peripheral surface extending around the head to the position of the spreading lip.
2. An applicator according to claim 1, wherein the free edge of the spreading lip is arcuate as seen in a direction perpendicular to the main area of the application surface.
3. An applicator according to claim 1 or 2, wherein the spreading lip has a front face which is concavely curved to define a smooth transition with the application surface.
4. An applicator according to claim 1, 2 or 3, wherein leading edge is rounded at a radius in the range of 3 to 12 mm.
5. An applicator according to any one of claims 1 to 4, wherein the spreading lip projects above the main area of the application surface to a height in the range of 5 to 15 mm.
6. An applicator according to any one of claims 1 to 5, wherein the minimum transverse dimension of the application surface is in the range of 3.5 to 5.5 cm.
7. An applicator according to any one of claims 1 to 6, wherein the spreading blade tip of the spreading lip is flexible.
8. An applicator according to any one of claims 1 to 6, wherein the applicator head comprises a pad of resiliently compressible material defining the application surface and the spreading lip.
9. An applicator according to claim 8, wherein the pad is made of elastomeric material.
10. An applicator according to claim 8 or 9, wherein the pad material is non-absorbent and has a substantially continuous surface structure at the application surface.
11. An applicator according to any one of claims 1 to 10, wherein the applicator head is mounted on a handle structure adapted to accommodate a supply of the substance to be applied to the skin.
12. An applicator according to claim 11, wherein a control member is carried by the handle structure to control delivery of substance to the applicator head for application to the skin.

13. An applicator according to claim 12, wherein the handle structure is adapted to house a pressurized container holding a supply of substance and having a dispensing valve, the control member being arranged to operate the valve to permit substance to flow from the container to the application surface of the applicator head.
- 5 14. An applicator according to claim 12, wherein the handle structure comprises a container enclosing a reservoir and equipped with a pump, and the control member is actuable to operate the pump to deliver the substance contained in the reservoir to the applicator head.
- 10 15. An applicator according to claim 11, wherein the handle structure comprises a squeeze-type container for the substance in the container to be delivered to the applicator head by squeezing the container.
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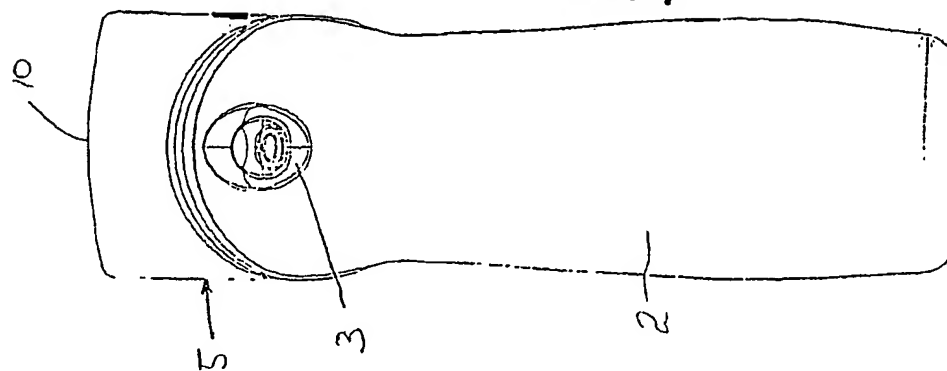


FIG 3

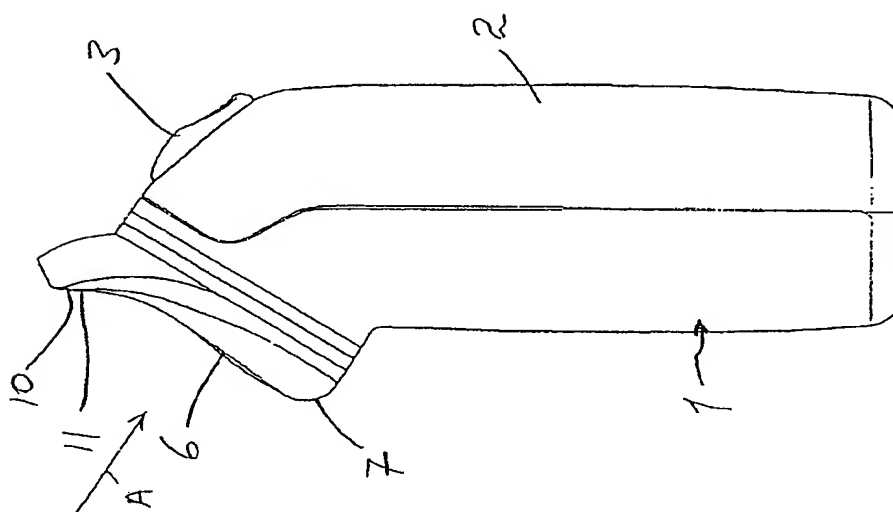


FIG 2

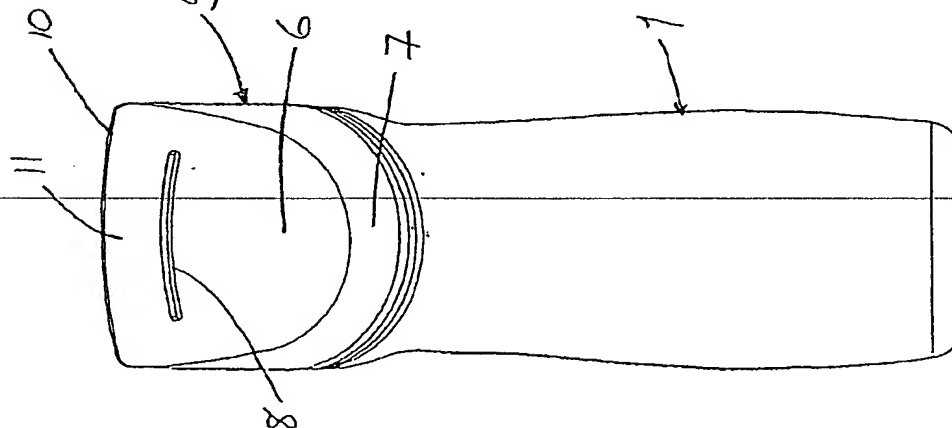


FIG 1

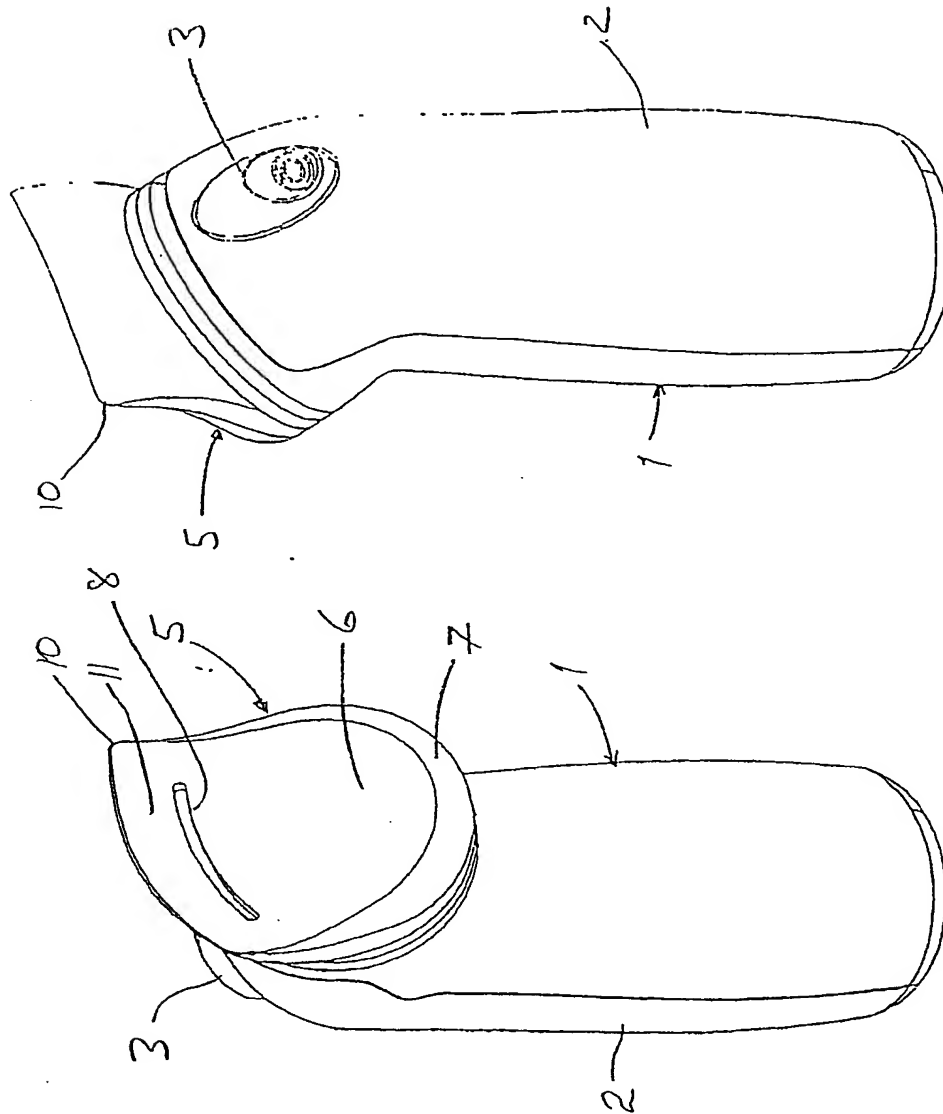


FIG 5

FIG 4

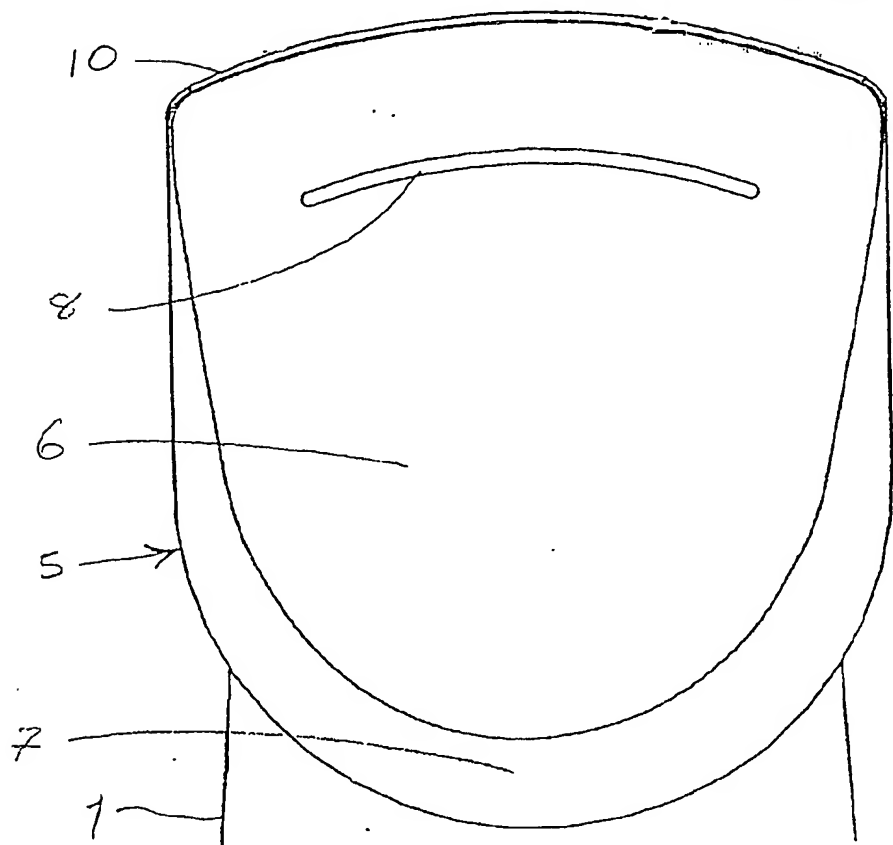


FIG 6

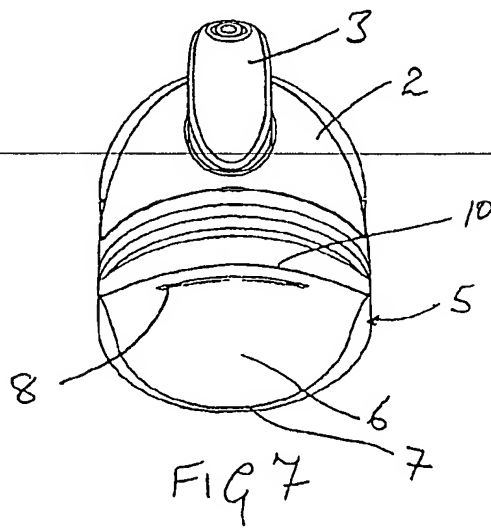


FIG 7

## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A45D27/04		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC 7 A45D B65D B43M A47K B05B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 1 860 790 A (HANS SCHULTHEISS) 31 May 1932 (1932-05-31) the whole document	1-3, 10-13,15
A	GB 1 390 153 A (GUIDOTTI C SPA LAB) 9 April 1975 (1975-04-09) the whole document	1,2, 10-13
A	DE 299 19 380 U (EHRHARDT HEINZ) 24 February 2000 (2000-02-24) figure 2	1
A	WO 97 18043 A (FIBRE CEMENT COMPOUND DEVELOPM ;WEISS HANS KARL (AT)) 22 May 1997 (1997-05-22) figures 1,2,5	1
-/--		
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Information on patent family members

International Application No

PCT/US 01/42560

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 1860790	A	31-05-1932	NONE	
GB 1390153	A	09-04-1975	IT 960445 B AT 337072 B AT 549473 A BE 801454 A1 CH 566913 A5 DE 2331695 A1 DE 7323186 U1 DK 130732 B FR 2190689 A1 LU 67890 A1 NL 7308820 A NO 136570 B SE 383090 B	20-11-1973 10-06-1977 15-09-1976 15-10-1973 30-09-1975 17-01-1974 13-05-1976 07-04-1975 01-02-1974 31-08-1973 02-01-1974 20-06-1977 01-03-1976
DE 29919380	U	24-02-2000	DE 29919380 U1	24-02-2000
WO 9718043	A	22-05-1997	WO 9718043 A1 AU 7485696 A	22-05-1997 05-06-1997
US 5415488	A	16-05-1995	NONE	
US 2063617	A	08-12-1936	NONE	
US 3624856	A	07-12-1971	NONE	